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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/789,092	02/27/2004	Jeffery R. Hawver	87807NAB	7698

7590 01/30/2006

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EXAMINER

MARTINEZ, CARLOS A

ART UNIT	PAPER NUMBER
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2853

DATE MAILED: 01/30/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/789,092

Applicant(s)

HAWVER, JEFFERY R.

Examiner

Carlos A. Martinez

Art Unit

2853

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-13 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-13 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 27 February 2004 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 02/27/2004.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: ____.

DETAILED ACTION

Drawings

1. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference character(s) not mentioned in the description: element 215 (refer to Figure 5) and element 155 (refer to Figure 6). Corrected drawing sheets in compliance with 37 CFR 1.121(d), or amendment to the specification to add the reference character(s) in the description in compliance with 37 CFR 1.121(b) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.
2. In addition to Replacement Sheets containing the corrected drawing figure(s), applicant is required to submit a marked-up copy of each Replacement Sheet including annotations indicating the changes made to the previous version. The marked-up copy must be clearly labeled as "Annotated Sheets" and must be presented in the amendment or remarks section that

Art Unit: 2853

explains the change(s) to the drawings. See 37 CFR 1.121(d)(1). Failure to timely submit the proposed drawing and marked-up copy will result in the abandonment of the application.

Specification

3. The abstract of the disclosure is objected to because it contains parenthetical references. Correction is required. See MPEP § 608.01(b).

Claim Objections

4. Claims 2-9 are objected to because of the following informalities: “A printing apparatus” is an improper reference [note: change to “The printing apparatus”]. Appropriate correction is required.
5. Claim 2 is objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. The claim states “said array is a linear array”; however, this statement does not constitute a further limitation of the independent claim, which states “a linear array of exposure sources”.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person

Art Unit: 2853

having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claim 1, 2, 3, 5, 6, 7, 8, and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bogart (US6452696) in view of Ozaki (US6819346) and further in view of Haas (US2004/0012824).

- Bogart discloses all the basic features of the instantly claimed invention: a printing apparatus for exposing an image onto a photosensitive medium (refer to Figure 2) with a linear array of exposure printhead (refer to element 1 of Figure 1 and lines 35-39, and 56-58 of column 3) having each exposure source operable at a variable intensity (refer to column 4, lines 20-23), a shuttle or carrying frame/vehicle for moving the printhead over the photosensitive medium in a reciprocating motion between the carriage assembly (refer to element 15 of Figure 2 and line 67 of column 3 to line 2 of column 4), and an encoder coupled to the shuttle mechanism for providing an index signal at each of a plurality of incremental positions (refer to element 24 of Figure 2 and column 4, lines 7-9).
- Though Bogart teaches exposure correction for the exposure sources, Bogart fails to teach exposure control logic for calculating a velocity according to index signal timing and for adjusting the intensity of the exposure source according a velocity as recited in the instant claims.
- Ozaki teaches an exposure control circuit for calculating a velocity according to an index signal timing from a rotary encoder signal connected to a drum and for adjusting intensity of the exposure source. Note Figure 1 and lines 37 to 67 of column 12.

Art Unit: 2853

- It would have been obvious to one having skill in the art at the time the invention was made to combine/modify the device of Bogart to include an exposure control circuit to calculate a velocity according an index signal timing and for adjusting intensity of the exposure source, as taught by Ozaki, for the purpose of image quality when printing at varying speeds.
- Though Haas does not specifically refer to a printing apparatus, Haas teaches an exposure control means/circuitry for adjusting/varying the exposure according to a velocity determined from the linear encoder of a movable exposure source (refer to paragraph 0027 and 0028).
- Therefore, it would have been obvious to one having skill in the art at the time the invention was made to modify the printing apparatus of Bogart, as modified by Ozaki with an exposure control logic, with an exposure control circuit as applied for adjusting/varying the exposure according to a velocity determined from the linear encoder of a movable exposure source, as taught in Haas, for the purpose of managing/regulating the exposure/intensity of an exposure source moving at varying speeds.

Further, with respect to claim 2, Bogart teaches a linear array (refer to column 1, lines 21-34).

Further, with respect to claim 3, Bogart teaches an array of exposure sources made of an LED array (refer to column 3, lines 49-58).

Art Unit: 2853

Further, with respect to claim 5, Bogart teaches an encoder strip (refer to element 24 of Figure 2 and column 4, lines 8-10).

Further, with respect to claim 6, Bogart teaches a device so that the photosensitive medium moves in a stepwise fashion between printing cycles (refer to column 4, lines 10-15).

Further, with respect to claim 7, Bogart teaches a device so that the photosensitive medium is motionless during each printing cycle (refer to column 4, lines 10-15).

Further, with respect to claim 8, Bogart teaches a device so that an adjustment is capable of being made, the same, to the intensity of the exposure sources (refer to lines 10-14 of the abstract).

Further, with respect to claim 10, the method of printing is anticipated based on the functions provided by the apparatus.

Further, with respect to claim 13, Bogart teaches a device so that the photosensitive medium moves in a stepwise fashion between printing cycles (refer to column 4, lines 10-15).

8. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Bogart (US6452696) in view of Ozaki (US6819346) and further in view of Haas (US2004/0012824), as applied to claim 1 above, and further in view of Boqart (US6917447). Bogart, as modified by

Art Unit: 2853

Ozaki and Haas, lacks the disclosing that a linear array of exposure sources could be comprised of red, green, or blue light sources; however, Bogart discloses exposure sources comprised of red, green, or blue light sources (refer to lines 3-6 of abstract). Therefore, it would have been obvious to one of ordinary skill in the art to modify the printing apparatus of Bogart, as modified by Ozaki and Haas, for the purpose of providing color imaging.

9. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Bogart (US6452696) in view of Ozaki (US6819346) and further in view of Haas (US2004/0012824).

- Bogart discloses all the features of the instantly claimed invention: a printing apparatus for exposing an image onto a photosensitive medium (refer to Figure 2) with a linear array of exposure printhead (refer to element 1 of Figure 1 and lines 35-39, and 56-58 of column 3) having each exposure source operable at a variable intensity (refer to column 4, lines 20-23), a shuttle or carrying frame/vehicle for moving the printhead over the photosensitive medium in a reciprocating motion between the carriage assembly (refer to element 15 of Figure 2 and line 67 of column 3 to line 2 of column 4), and an encoder coupled to the shuttle mechanism for providing an index signal at each of a plurality of incremental positions (refer to element 24 of Figure 2 and column 4, lines 7-9).
- Though Bogart teaches exposure correction for the exposure sources, Bogart fails to teach exposure control logic for calculating a velocity according to index signal timing and for adjusting the intensity of the exposure source according to a velocity as recited in the instant claims.

- Ozaki teaches an exposure control circuit for calculating a velocity according to an index signal timing from a rotary encoder signal connected to a drum and for adjusting intensity of the exposure source. Note Figure 1 and lines 37 to 67 of column 12.
- It would have been obvious to one having skill in the art at the time the invention was made to combine/modify the device of Bogart to include an exposure control circuit to calculate a velocity according an index signal timing and for adjusting intensity of the exposure source, as taught by Ozaki, for the purpose of image quality when printing at varying speeds.
- Haas does not specifically refer to a printing apparatus; however, Haas teaches an exposure control means/circuitry for adjusting/varying the exposure according to a velocity determined from the linear encoder of a movable exposure source (refer to paragraph 0027 and 0028).
- Therefore, it would have been obvious to one having skill in the art at the time the invention was made to modify the printing apparatus of Bogart, as modified by Ozaki with an exposure control logic, with an exposure control circuit as applied for adjusting/varying the exposure according to a velocity determined from the linear encoder of a movable exposure source, as taught in Haas, for the purpose of managing/regulating the exposure/intensity of an exposure source moving at varying speeds. *Further the method of printing is anticipated based on the functions provided by the apparatus.*

10. Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Bogart (US6452696) in view of Ozaki (US6819346) and further in view of Haas (US2004/0012824).

- Bogart discloses all the features of the instantly claimed invention: an exposure source for scanning an image onto a photosensitive medium (refer to Figure 2), a shuttle or carrying frame/vehicle for moving the printhead across/over the photosensitive medium in a scanning motion (refer to element 15 of Figure 2 and line 67 of column 3 to line 2 of column 4), and an encoder coupled to the shuttle mechanism for providing an index signal at each of a plurality of incremental positions (refer to element 24 of Figure 2 and column 4, lines 7-9).
- Though Bogart teaches a method of uniform (refer to lines 4-14 of abstract) exposure correction for the exposure sources, Bogart fails to teach the calculating of a velocity and full scale correction factor according to index signal timing, the multiplying of a full scale correction factor to the target exposure intensity, or the adjusting/correcting the intensity of the exposure source according to a velocity as recited in the instant claims.
- Ozaki teaches the calculating of a velocity (refer to lines 7-18 of column 8) and the use of a full scale factor (e.g. using the raw value of velocity obtained from the encoder) – which the applicant defines as being based on the use of the full velocity value – to apply to the target exposure intensity for adjusting/correcting the intensity of the exposure (refer to lines 7-17, 33-43 of column 18; refer also to flow diagram of Figure 1).

- It would have been obvious to one having skill in the art at the time the invention was made to combine/modify the method of Bogart to include the calculating of a velocity and the use of a full scale factor to apply to the target exposure intensity for adjusting/correcting the intensity of the exposure, as taught by Ozaki, for the purpose of image quality when printing at varying speeds. Further, it should be officially noted that though multiplication of a corrective factor is not specifically mentioned the use of multiplication is obvious as a part of factoring in the correction value.
- Though the method of Bogart as modified by Ozaki does not teach the adjusting/correcting of exposure sources with respect to the velocity along the scanning direction, namely the velocity from a movable exposure source. Haas teaches the use of an exposure control means/circuitry for adjusting/varying the exposure according to a velocity determined from the linear encoder of a movable exposure source (refer to paragraph 0027 and 0028).
- Therefore, it would have been obvious to one having skill in the art at the time the invention was made to modify the method of Bogart, as modified by Ozaki, with the use of an exposure control means/circuitry for adjusting/varying the exposure according to a velocity determined from the linear encoder of a movable exposure source, as taught in Haas, for the purpose of managing/regulating the exposure/intensity of an exposure source moving at varying speeds.

Art Unit: 2853

11. Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Bogart (US6452696) in view of Ozaki (US6819346) and further in view of Hirahata (US5311216) and Haas (US2004/0012824).

- Bogart discloses all the features of the instantly claimed invention: an exposure source for scanning an image onto a photosensitive medium (refer to Figure 2), a shuttle or carrying frame/vehicle for moving the printhead across/over the photosensitive medium in a scanning motion (refer to element 15 of Figure 2 and line 67 of column 3 to line 2 of column 4), and an encoder coupled to the shuttle mechanism for providing an index signal at each of a plurality of incremental positions (refer to element 24 of Figure 2 and column 4, lines 7-9).
- Though Bogart teaches a method of uniform (refer to lines 4-14 of abstract) exposure correction for the exposure sources, Bogart fails to teach the calculating of a velocity and full scale correction factor according to index signal timing, the multiplying of a full scale correction factor to the target exposure intensity, or the adjusting/correcting the intensity of the exposure source according to a velocity as recited in the instant claims.
- Ozaki teaches the calculating of a velocity (refer to lines 7-18 of column 8) and the use of a correction factor to apply to the target exposure intensity for adjusting/correcting the intensity of the exposure (refer to lines 7-17, 33-43 of column 18; refer also to flow diagram of Figure 1).
- It would have been obvious to one having skill in the art at the time the invention was made to combine/modify the method of Bogart to include the calculating of a

velocity and the use of correction factor to apply to the target exposure intensity for adjusting/correcting the intensity of the exposure, as taught by Ozaki, for the purpose of image quality when printing at varying speeds.

- Though the method of Bogart as modified by Ozaki does not teach the deriving of a fractional correction factor and the multiplying of the calculated correction factor for correcting exposure. Hirahata teaches the use of a fractional correction factor and the multiplying of the calculated correction factor for correcting exposure (refer to lines 11-15 of the abstract and lines 7-19 of column 3).
- Therefore, it would have been obvious to one having skill in the art at the time the invention was made to modify the method of Bogart, as modified by Ozaki, with the use of a fractional correction factor and the multiplying of the calculated correction factor for correcting exposure, as taught in Hirahata, for the purpose of simplifying the calculation of the correction factor and providing an alternative means of calculation.
- Though the method of Bogart as modified by Ozaki and further modified by Hirahata does not teach the adjusting/correcting of exposure sources with respect to the velocity along the scanning direction, namely the velocity from a movable exposure source. Haas teaches the use of an exposure control means/circuitry for adjusting/varying the exposure according to a velocity determined from the linear encoder of a movable exposure source (refer to paragraph 0027 and 0028).
- Therefore, it would have been obvious to one having skill in the art at the time the invention was made to modify the method of Bogart, as modified by Ozaki and

Art Unit: 2853

Hirahata, with the use of an exposure control means/circuitry for adjusting/varying the exposure according to a velocity determined from the linear encoder of a movable exposure source, as taught in Haas, for the purpose of managing/regulating the exposure/intensity of an exposure source moving at varying speeds.

Pertinent Art References

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Appropriate prior art, which is nearest to the subject matter defined in the claims, is listed in the Notice of References Cited. These prior art references, such as US6010206, US4378149, US4835549, US4780730, US5121146, US6215095B1, US6499827B2, US5111218, US4074320, US4789874, US6266077, and US5184011 are included because they pertain to exposure printing or subject matter/elements pertinent to printing by means of exposure sources similar to those defined in the claims of the applicant.

Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Carlos A. Martinez whose telephone number is (571) 272-8349. The examiner can normally be reached on 8:30 am - 5:00 pm (M-F).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, STEPHEN D. MEIER can be reached on (571) 272-2149. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2853

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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01/24/2006



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